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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,696	12/12/2003	Robert L. Memmen	EH-10762 (03-501)	1219

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EXAMINER

COMPTON, ERIC B

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,696

Applicant(s)

MEMMEN ET AL.

Examiner

Eric B. Compton

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 22-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-21 in the reply filed on June 15, 2006, is acknowledged. The traversal is on the ground(s) that the search of Groups I and II would overlap. This is not found persuasive because even though there might be some overlap, the different inventions have a different classification in the art and different field of search. See MPEP 808.02. Furthermore, in replying Applicant is required to specifically point out the reasons on which he or she bases his or her conclusions that a requirement to restrict is in error. See MPEP 818.03(a) (emphasis added). A mere broad allegation that the requirement is in error, e.g. that the searches overlap, does not comply with the requirement of 37 CFR § 1.111. See *Id.*

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 22-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Objections

3. Claim1 is objected to because of the following informalities: there should be a semicolon (;) after "repair material" in line 4. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is a Markush type claim ("wherein said repair material comprises [X, Y, or Z]").

MPEP § 2173.05(h) provides:

Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. ***One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C."*** See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925).

Ex parte Markush sanctions claiming a genus expressed as a group consisting of certain specified materials. Inventions in metallurgy, refractories, ceramics, pharmacy, pharmacology and biology are most frequently claimed under the Markush formula but purely mechanical features or process steps may also be claimed by using the Markush style of claiming. See *Ex parte Head*, 214 USPQ 551 (Bd. App. 1981); *In re Gaubert*, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975); and *In re Harnisch*, 631 F.2d 716, 206 USPQ 300 (CCPA 1980). ***It is improper to use the term "comprising" instead of "consisting of."*** *Ex parte Dotter*, 12 USPQ 382 (Bd. App. 1931).

(emphasis added).

Claim 10 recites the limitation "the removing of additional material" in line 1.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3-6 and 15, are rejected under 35 U.S.C. 102(e) as being anticipate by WO 03/028428 to Hass et al.

Regarding claim 1, Hass discloses a method for restoring a part which has lost first material from a site, see Page 9, lines 31-32, comprising:

placing the part (20) in a deposition chamber;

applying a first electric potential (65) to the part;

evaporating components (25) for forming a repair material;

ionizing the evaporated components; and

modulating the first electric potential so as to draw the ionized components to the part so that buildup of the repair material at least partially replaces the first material. See Fig. 11; Page 21, lines 1-3.

Regarding claims 3-6, these limitations are disclosed by Hass, such as heating and modulating.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hass in view of U.S. Pre-Grant Pub. 2002/0076573 to Neal et al.

Hass discloses the invention cited above, including restoring turbine blades. However, the reference does not disclose that the turbine blade is a Ti alloy and the repair material is Ti-based.

Neal discloses a method for repairing turbine blades by an electron beam physical vapor deposition process, like Hass. Neal notes that the invention may be used with titanium (Ti) superalloy turbines blades. See [0004].

Regarding claim 2 and 16, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the process of Hass wherein the turbine blade is a Ti alloy and the repair material is Ti-based, in light of the teachings of Neal, in order to efficiently repair titanium superalloy turbine blades.

Regarding claim 7-8, and 10, Neal notes the damaged areas may be machining in order to clean the areas prior to repairing. See [0026].

Regarding claim 9, Hass does not disclose a particular titanium superalloy claimed. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have practiced the above process wherein the repair

material is a claimed, in light of the teachings of Hass and Neal, in order to repair a superalloy turbine blade formed of the same claimed superalloy. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Regarding claims 11-12, it is clearly a fortuitous matter as to where the damage site is formed, its size and depth, depending on the service requirements of a particular turbine blade. The above method clearly can be used for any given damage site. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have repaired the turbine of Hass and Neal, regardless of a particular damage site, in order to repair the site.

Regarding claims 15, both Hass and Neal disclose vacuum environments. Neal preferably notes a pressure of 10^{-5} to 10^{-2} Torr (0.0013 to 1.3 Pa). See [0035].

Regarding claims 17-19, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used these variables in order to optimize the process. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Regarding claim 20-21, Hass disclosed these limitations, such as heating and modulating.

10. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hass and Neal in view of U.S. Pat. 6,754,955 to Carl, Jr. et al.

Hass and Neal disclose the invention cited above. However, the references do not disclose the using a backing material to form a tip.

Carl discloses a method of repairing a turbine blade tip by building up repair material on a backing plate (26). See Figure. 4.

Regarding claims 13-14, it would have been obvious to one having ordinary skill in the art at the time the invention was made to performed the build up of material of Hass and Neal, in light of the teachings of Carl, in order to repair a tip of a turbine blade.

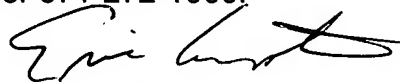
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Eric B. Compton
Primary Examiner
Art Unit 3726

ebc